

BEFORE THE BOARD OF
NATURAL RESOURCES AND CONSERVATION
OF THE STATE OF MONTANA

IN THE MATTER OF APPLICATION FOR
RESERVATION OF WATER NO. 1781-r
BY THE MONTANA FISH AND GAME
COMMISSION

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FINDINGS OF FACT AND CON-
CLUSIONS OF LAW OF APPLI-
CATION NO. 1781-r

The above-entitled matter came on regularly for hearing on or about August 17, 1977, in Billings, Montana, before the Montana Board of Natural Resources and Conservation and its duly appointed Hearing Examiner, James Driscoll. The Applicant appeared by and through its counsel of record, F. Woodside Wright and Clayton Herron. The Montana Department of Natural Resources and Conservation appeared by and through its counsel of record, Richard Gordon. The fourteen applicant conservation districts appeared by and through their counsel of record, Gary Spaeth. The City of Billings appeared by and through its counsel of record, Calvin Calton. Utah International, Inc., appeared by and through its counsel of record, Urban Roth. The Intake Water Company appeared by and through its counsel of record, Henry Loble and Boyd Henderson. The Montana Power Company appeared by and through its counsel of record, Robert Woodahl. The Montana Water Development Association appeared without benefit of counsel. The Great Western Sugar Company appeared by and through its counsel of record, Richard McCann. Trout Unlimited and the Federation of Fly Fishermen appeared by and through their counsel of record, James Goetz. The Montana Wildlife Federation

appeared by and through its counsel of record, William Madden. The Environmental Information Center appeared by and through its counsel of record, William Leaphart. Witnesses were duly sworn, and oral and documentary evidence was introduced.

The Board, having read and fully considered the complete record, makes the following Findings of Fact and Conclusions of Law relating to the Montana Fish and Game Commission, Application No. 1781-r:

FINDINGS OF FACT

1. The reaches of the Yellowstone River and certain of its major tributaries for which an instream reservation of water has been applied for by the Montana Fish and Game Commission are shown in Map FG-1 (Draft EIS, Vol. I, p. 181).

2. The Department of Fish and Game has applied for an instream reservation on many of the streams in the Yellowstone River Basin, including a request for an instream reservation in the Yellowstone River (Montana Fish and Game Commission, Application No. 1781-r).

3. Fish and Game has made lawful, proper and timely application for reservation of water, to maintain flows, levels, or qualities of water thereof, in the Yellowstone River Basin, including the reaches and tributaries thereof, as follows:

UPPER YELLOWSTONE BASIN (Town of Gardiner to mouth of Boulder River)

Armstrong Spring Creek

Bear Creek

Big Creek

Billman Creek

Brackett Creek

Cedar Creek

Cinnabar Creek

Coke Creek

Eight Mile Creek

Emigrant Spring Creek

Flathead Creek

Fleshman Creek

Fridley Creek

Little Mission Creek

McDonald Spring Creek

Mill Creek

Mission Creek

Hol Heron Creek

Nelson Spring Creek

Rock Creek (Shields Drainage)

Rock Creek (of the Yellowstone)

Shields River

Sixmile Creek

Smith Creek

Suce Creek

Tom Miner Creek

Trail Creek

Yellowstone River (Main Channel, Gardiner to Boulder River)

MIDDLE YELLOWSTONE BASIN (Boulder River to Bighorn River)

Mid-Big Timber Creek

Lower Big Timber Creek

Upper Bluewater Creek

Middle Bluewater Creek

Lower Bluewater Creek

Bridger Creek

Boulder River (Sweet Grass County)

Boulder River (Sweet Grass and Park Counties)

Boulder River (Sweet Grass County)

Upper Butcher Creek

Lower Butcher Creek

Castle Creek (Stillwater County)

Castle Creek (Stillwater and Sweet Grass Counties)

Clarks Fork Yellowstone River
Lower Clarks Fork Yellowstone River
Clear Creek
Dry Creek
East Boulder River (Sweet Grass County)
Fishtail Creek (Stillwater County)
West Fishtail Creek (Stillwater County)
Little Rocky Creek (Stillwater County)
Lower Deer Creek
Picket Pin Creek (Stillwater and Sweet Grass Counties)
Mid-Red Lodge Creek
Lower Red Lodge Creek
Rock Creek
Mid-Rock Creek
Lower Rock Creek
Lower East Rosebud Creek
West Rosebud Creek
Lower West Rosebud Creek
Sage Creek
Stillwater River (Stillwater County)
Mid-Sweet Grass Creek
Lower Sweet Grass Creek
Upper Deer Creek
Lower West Boulder River
West Fork Stillwater River (Stillwater County)
West Fork Stillwater River (Sweet Grass County)
Mid-Willow Creek
Lower Willow Creek
Yellowstone River (Main Channel, Boulder River to Bighorn River)

LOWER YELLOWSTONE BASIN

Bighorn River

Tongue River

Hanging Woman Creek

Otter Creek

Pumpkin Creek

Powder River

Rosebud Creek

Yellowstone River (Big Horn River to Montana-North Dakota State Line
(Exh. DFG 1781-r pii & iii).

4. The Department of Health and Environmental Sciences has also applied for an instream reservation for waters in the Yellowstone River (Department of Health and Environmental Sciences, Application No. 10003-r).

5. Although the purpose, the need and the public interest of each of these reservation requests differ, the granting of one instream reservation would insure the other state agency an instream reservation.

6. Because the purpose, the need and the public interest for a Fish and Game instream reservation throughout the entire Yellowstone River Basin are basically the same, the Board, as hereinafter set forth, adopts general Findings of Fact relating to these elements of water reservations as mandated by R.C.M. 89-890.

Findings Related to the Purpose of Instream Reservations of Waters in Streams of the Yellowstone River Basin (89-890(3)(a)).

7. The purpose of the reservation is to ensure that waters are available for existing uses and to maintain a minimum flow, level, and quality of water (Montana Fish and Game Commission, Application No. 1781-r, p. 1 through 3).

8. There is an abundant and viable fishery and aquatic ecosystem existent in the Yellowstone River Basin (Tr. Vol. 18, Testimony of Halterman, p. 2)

9. A purpose of the instream reservation being sought by the Department of Fish and Game is to maintain the abundant and viable fishery and aquatic ecosystem existent in the Yellowstone River Basin (Application No. 1781-r).

10. A purpose of the reservation is to provide fish and wildlife habitat sufficient to perpetuate the diverse species comprising the various natural habitats (Montana Fish and Game Commission, Application No. 1781-r).

11. A purpose of the reservation is to help maintain water quality (Montana Fish and Game Commission, Application No. 1781-r, p. 3).

12. A purpose of the reservation is to contribute to a clean and healthful environment (Montana Fish and Game Commission, Application No. 1781-r, p. 3).

13. It is established to the satisfaction of the Board that the purpose of an instream reservation of waters of the streams in the Yellowstone River Basin has been shown.

Findings Related to the Need of Instream Reservations of Waters in Streams of the Yellowstone River Basin (89-890(3)(b)).

14. Instream reservations are necessary for channel flushing and the maintenance of the channels (Tr. Vol. 18, Testimony of Reichmuth).

15. Instream reservations are necessary to control aquatic plant growth and to maintain aquatic and wildlife species and the fishery of the Basin (Application 1781-r, pp. 1 through 3).

16. There is a public need for the purposes of providing fish and wildlife habitat sufficient to perpetuate the diverse species comprising this natural resource at levels comparable to currently existing levels.

17. There is a need for the reservations of waters of the Yellowstone River and its tributaries for recreational purposes which would be met by the reservation of flows requested by Fish and Game.

18. The need for reservations of water in each stream reach requested by Fish and Game is to provide for continued preservation of fish and wildlife habitat sufficient to perpetuate the several and many species found in each stream reach at currently existing levels; to provide water-based and water-related recreation for residents of this state and tourists and other transients to this state; to provide Fish and Game standing to represent the public's interest in fish and wildlife and recreation when future applications for water use permits in the stream reaches are being considered (Montana Fish and Game Proposed Finding 75).

19. It is established to the satisfaction of the Board that the need for instream water reservations of the waters in streams of the Yellowstone River Basin has been shown.

Findings Related to the Public Interest of Instream Reservations for the Waters in the Streams of the Yellowstone River Basin (89-890(3)(d)).

20. The Fish and Game's application for reservations of water in the Yellowstone River Basin represents the public interest in preserving, protecting and enhancing the environment (Fish and Game Proposed Finding 75).

21. The application of the Fish and Game is in the public interest in that it provides aesthetically pleasing surroundings, and that it preserves fishing waters in their natural existing state (Fish and Game Proposed Finding 75).

22. The instream reservation is in the public interest in that it protects and preserves fish habitat, preserves recreational sites and ensures perpetuation of non-game wildlife in the existing ecosystem (Fish and Game Proposed Finding 75).

23. The instream reservation is in the public interest in that it will:

- a) continue the perpetuation of the fish and wildlife resources;
- b) continue perpetuation of the fish and wildlife resources for current and future utilization by the public;
- c) maintain water quality

24. It is established to the satisfaction of the Board that the public interest for instream reservations of the waters in the streams of the Yellowstone River Basin has been shown.

Findings Related to the Amount Necessary for the Purpose of the Reservation of Waters of the Streams of the Yellowstone River Basin (89-890(3)(c)).

Instream Reservation of the Yellowstone River at Sidney, Montana

25. The fish species present in this part of the Yellowstone River are sturgeon, paddlefish, mooneye, trout, minnow, sucker, catfish, codfish, sunfish, perch and drum.

26. The resident and migratory wildlife species present in this part of the stream are loons, grebes, pelicans, cormorants, swans, geese, ducks, vultures, hawks, eagles, falcons, herons, cranes, coots, avocets, plovers, sandpipers, snipes, gulls, terns, owls, magpies, crows and other birds and mule deer, white-tailed deer, beavers, minks, muskrats and river otters (Department of Fish and Game, Application No. 1781-r, exh. 1, pp. 231 through 233).

27. A reservation of instream water will protect nesting and production, migrations, incubations and receiving of the various species (Department of Fish and Game, Application No. 1781-r, exh. 1, pp. 234 and 235).

28. An adequate instream flow will provide ample food supply, adequate habitat area and suitable water quality for all the fishery and wildlife species of this part of the Yellowstone River (Tr. Vol. 13, pp. 195 and 196).

29. It is established to the satisfaction of the Board that the amount of water necessary for the purpose of the instream reservation of the Yellowstone River at Sidney is an eighteenth percentile flow less depletions of other reservations on the Yellowstone River Basin above Sidney, Montana. This reservation amounts to 5,492,310 acre-feet per year with a monthly breakdown as follows:

	<u>CFS</u>	<u>AF/Y</u>	<u>PERCENTILE</u>
January	3,738	229,831	
February	4,327	240,281	
March	6,778	416,711	
April	6,808	405,031	
May	11,964	735,528	
June	25,140	1,495,644	
July	10,526	647,090	
August	2,670	164,166	
September	3,276	194,917	
October	6,008	369,377	
November	5,848	347,920	
December	3,998	245,814	
<u>Average</u>	<u>7,856 cfs</u>	<u>5,492,310 af/y</u>	

Instream Reservation of Powder River

30. The Department of Fish and Game has requested an instream reservation on the Powder River from its mouth at the Yellowstone River to the Wyoming border (Department of Fish and Game, Application 1731-r).

31. Evaluations of the flow requirements for the Powder River were based on Northern Great Plains Resource Program estimates, United States Gauging Data, and were verified by field observations and measurements (Department of Fish and Game, Application No. 1718-r, exh. 1, p. 220; Tr. Vol. 26, Redirect of Rehwinkel; Department of Fish and Game, Application No. 1731-r, exh. 28; Tr. Vol. 28, p. 16, Testimony of Rehwinkel).

32. Significant reduction in flows of the Powder River would detrimentally affect the habitat of beaver and other furbearers because the number and size of islands and gravel bars would be reduced and the stream morphology would change from a braided to a meandering

stream having less habitat for these animals (Exh. DFG-1781-r-1, p. 23-26).

33. Resident fish species present in the Powder River include the sturgeon chub and sauger, shovelnose sturgeon and channel catfish (Exh. DFG-1781-r-1, p. 219-220).

34. Flows are required by the fish species of the Powder River for passage, spawning and rearing (DFG-1781-r, Exh. 1, pp. 221-222).

35. It is established to the satisfaction of the Board that the amount necessary for the purpose of the instream reservation of waters in the Powder River is the ninetieth percentile flow. This reservation amounts to 95,201 acre-feet per year with a monthly breakdown as follows:

	<u>CFS</u>	<u>AF/Y</u>
January	31.9	1961
February	71.8	3986
March	291	17,888
April	347	20,643
May	424	26,064
June	184	10,946
July	70	4303
August	14.5	891
September	8.87	527
October	9.43	579
November	61.6	3664
<u>December</u>	<u>61</u>	<u>3749</u>
Average	131 cfs	9520 af/y

Instream Reservation of Yellowstone River at Miles City

36. The fish species present in this part of the stream are trout, whitefish, catfish, sauger, walleye, ling, and crappie (DFG-1781-r, Exh. 1, p. 183).

37. The resident and wildlife migratory species present in this part of the Yellowstone River are beaver, muskrat, marten, mink, raccoon, pheasant, white-tailed deer, ducks, raptors, bald eagles, Canadian geese, heron, swans, and cranes (DFG-1781-r, Exh. 1, p. 183).

38. A reservation will ensure proper spawning, incubation and rearing for the fishery of this part of the Yellowstone River (DFG-1781-r, Exh. 1, p. 184).

39. It is established to the satisfaction of the Board that the amount of water necessary for the instream reservation of the Yellowstone River at Miles City, Montana, is the eightieth percentile flow of the Yellowstone River less the depletions of other water reservations on the Yellowstone River Basin above Miles City. This instream reservation amounts to 6,499,936 acre-feet per year with a monthly breakdown as follows:

	<u>CFS</u>	<u>AF/Y</u>
January	3,329	235,400
February	3,998	221,995
March	6,359	390,929
April	5,848	347,957
May	12,280	754,904
June	26,188	1,557,980
July	10,278	631,856
August	3,862	237,415
September	4,338	266,682

	<u>CFS</u>	<u>AF/Y</u>
October	5,849	359,578
November	5,508	327,730
<u>December</u>	<u>4,009</u>	<u>246,466</u>
Average	7,705 cfs	5,578,892 af/y

40. The Montana Department of Health and Environmental Sciences has been given an instream flow reservation of the same quantity as that listed above for the Department of Fish and Game.

41. In some months the instream reservation established by the Board exceeds the request of the Department of Fish and Game. The reservation of the instream flow for the Fish and Game is only for the amount requested and it is not to exceed that amount.

Instream Reservation of Tongue River

42. The Department of Fish and Game has requested an instream reservation of the Tongue River from the Wyoming border to the mouth at the Yellowstone River (Fish and Game Application No. 1781-r).

43. Evaluations of the Tongue River's flow are based on water temperature data, depth and velocity criteria for spawning and incubation flows, water surface profile program and wetted perimeter method (Department of Fish and Game, Application No. 1781-r, Exh. 1, pp. 203 through 208; Tr. Vol. 14, Testimony of Elser).

44. The resident game fish species present in the Tongue River are bass, pike, sauger, walleye, catfish, paddlefish, sturgeon, and burbot (DFG-1781-r, Exh. 1, pp. 201-207).

45. Flows are required by the various fish species for spawning, rearing and passage (DFG-1781-r, Exh. 1, pp. 202-209).

46. The Montana Department of Natural Resources has been granted a reservation on the Tongue River (Order).

47. The Department of Natural Resources' reservation is based on that Department's intention of building a dam on the Tongue River (Department of Natural Resources, Application No. 9942-r42C).

48. The Department of Natural Resources was granted a reservation on the Tongue River with a condition that an average of 75 cfs be released from the dam in order to contribute/ ^{to the} instream reservation of the Fish and Game (Order).

49. It is established to the satisfaction of the Board that the amount of water necessary for the purpose of the Department of Fish and Game's reservation on the Tongue River from the Wyoming border to the Tongue River reservoir is 244,799 acre-feet per year with a monthly breakdown as follows:

	<u>CFS</u>	<u>AF/Y</u>
January	160	9,836
February	160	8,883
March	200	12,294
April	200	11,898
May (1-20)	700	27,762
May (21-31)	1,200	26,175
June	1,350	80,312
July	360	22,130
August	100	6,147
September	100	5,949
October	200	12,294
November	200	11,898
<u>December</u>	<u>150</u>	<u>9,221</u>
<u>Average</u>	<u>338 cfs</u>	<u>244,799 af/y</u>

50. It is established to the satisfaction of the Board that the amount of water necessary for the purpose of the Fish and Game's instream reservation in the Tongue River from the Tongue River reservoir to the mouth of the Yellowstone River an average flow of 75 cfs at the mouth. This reservation amounts to 54,289 af/y with a monthly breakdown as follows:

	<u>CFS</u>	<u>AF/Y</u>
January	75	4,611
February	75	4,164
March	75	4,611
April	75	4,462
May	75	4,611
June	75	4,462
July	75	4,611
August	75	4,611
September	75	4,462
October	75	4,611
November	75	4,462
December	75	4,611
Average	75	54,299
<u>Instream Reservations for Hanging Woman Creek</u>		

51. Evaluations of the flow requirements for Hanging Woman Creek are based on migrant fish trap data, United States Gauging Station stream discharge records and streamflow monitoring (DFG-1781-r, Exh. 1, p. 211, Tr. Vol. 14, pp. 53-54 and 56).

52. The fish species present in Hanging Woman Creek are bass, sauger, pike and catfish (DFG-1781-r, Exh. 1, p. 211).

53. An instream reservation is needed for passage, spawning and rearing of the fishery (DFG-1781-r, Exh. 1, p. 211).

54. It is established to the satisfaction of the Board that the amount of water necessary for the purpose of the instream reservation on Hanging Woman Creek is the historic minimum monthly flow derived from the United States Gauging Station records.

Instream Reservation in Otter Creek

55. Evaluations of the flow requirements for Otter Creek are based on the United States Gauging Station gauging records and field observations of fishery (DFG-1781-r, Exh. 1, p. 215).

56. The fish species present in Otter Creek are crappie, bass, pike and catfish (DFG-1781-r, Exh. 1, pp. 212-215).

57. An instream reservation is needed for passage, spawning and rearing of the fishery (DFG-1781-r, Exh. 1, p. 211).

58. It is established to the satisfaction of the Board that the amount of water necessary for the purpose of the instream reservation on Otter Creek is the historic minimum monthly flow derived from the United States Gauging Station records.

Instream Reservation in Pumpkin Creek

59. Evaluations for the flow requirements for Pumpkin Creek are based on the United States Gauging Station gauging data, field observations and observations of stream flow records (DFG-1781-r, Exh. 1, p. 217).

60. The fish species present in Pumpkin Creek are catfish, sauger, and crappie (DFG-1781-r, Exh. 1, p. 217).

61. An instream reservation is needed for passage, spawning and rearing of the fishery (DFG-1781-r, Exh. 1, p. 218).

62. It is established to the satisfaction of the Board that the amount of water necessary for the purpose of the instream reservation on Pumpkin Creek is the historic minimum monthly flow derived from the United States Gauging Station records.

Instream Reservation for Rosebud Creek

63. Evaluations of the Rosebud Creek flow are based on spawning studies, field studies, migrant fish trapping and United State Gauging Station stream discharge data (DFG-1781-r, Exh. 1, pp. 199-225).

64. Fish species present in Rosebud Creek are sauger, walleye, pike, catfish and burbot (DFG-1781-r, Exh. 1, p. 224).

65. An instream flow is needed in Rosebud Creek in order to protect the passage, spawning and rearing of the fishery (DFG-1781-r, Exh. 1, pp. 225-226).

66. It is established to the satisfaction of the Board that the amount of water needed for the purpose of the instream reservation of Rosebud Creek is the eightieth percentile flow of Rosebud Creek from Cottonwood Creek to the Yellowstone River. It is further established by the Board that the Department of Fish and Game must supply U.S.G.S. or other data in order that the exact flow figures for this reservation may be determined.

Instream Reservation for Bighorn River

67. Evaluations of the flow requirements of the Bighorn River are based on the United States Gauging Station gauging data and comparison of data at various stations along the river (DFG-1781-r, Exh. 1, pp. 188 and 191).

68. The fish species found in the Bighorn River are catfish, crappie, bass, trout, pike, sauger and burbot (DFG-1781-r, Exh. 1, p. 190).

69. The wildlife species present in the Bighorn River area are beaver, maskrat, mink, raccoon, fox, squirrel, deer, coyote, skunk, bobcat, ducks, geese, cormorant, osprey and bald eagle (DFG-1781-r, Exh. 1, p. 187).

70. An instream flow is needed to transport the yearly accumulation of sediment and control weed growth, and to sweep gravel bars free of some vegetation which aids the Canadian geese in nesting activities (DFG-1781-r, Exh. 1, p. 186).

71. An instream flow is needed to provide the fishery with migratory passage, spawning, incubation and rearing (DFG-1781-r, Exh. 1, p. 188).

72. Although the Department of Fish and Game has applied for water for an instream water reservation at two different locations on the Bighorn River, the Board is giving the Department of Fish and Game one instream reservation in the Bighorn River at the mouth.

73. It is established to the satisfaction of the Board that the amount of water necessary for the purpose of an instream reservation for the Bighorn River at the mouth is 2,477,987 acre-feet per year with a monthly breakdown as follows:

	<u>CFS</u>	<u>AF/Y</u>
January	3,300	202,863
February	3,200	177,679
March	4,000	245,895
April	3,600	214,167
May	3,800	233,600
June	5,200	309,352
July (1-20)	3,800	150,710
July (21-31)	3,200	69,802

	<u>CFS</u>	<u>AF/Y</u>
August	2,800	172,127
September	2,600	154,676
October	2,700	165,979
November	3,100	184,421
<u>December</u>	<u>3,200</u>	<u>196,716</u>
Average	3,422 cfs	2,477,987 af/y
<u>Instream Reservation of Yellowstone River at Billings, Montana</u>		

74. Although the Department of Fish and Game has requested an instream reservation in the Yellowstone River at the mouth of the Bighorn River, but not including the Bighorn River, it is the Board's judgment that the instream reservation should be granted in the Yellowstone River at Billings, Montana. This judgment is based on the availability of U.S.G.S. records at the Billings station and also the instream reservation in the Yellowstone River for the Department of Health and Environmental Sciences.

75. Evaluations of the flow requirement for this part of the Yellowstone River were based on the U.S.G.S. data, and biological data (DFG-1781-r, Exh. 1, pp. 177, 183).

76. Fish species present in this part of the Yellowstone River include trout, whitefish, catfish, sauger, walleye, ling and crappie (DFG-1781-r, Exh. 1, p. 183).

77. Wildlife present in this part of the Yellowstone River include beaver, muskrat, marten, mink, raccoon, pheasant, deer, ducks, raptors, bald eagles, geese, heron, swans and cranes (DFG-1781-r, Exh. 1, p. 183).

78. An instream flow is needed in this part of the Yellowstone River for spawning, incubation and rearing purposes (DFG-1781-r, Exh. 1, p. 184).

79. It is established to the satisfaction of the Board that the amount necessary for the purpose of the instream reservation of the Yellowstone River at Billings, Montana, is 3,846,025 acre-feet per year plus the dominant discharge of 68,430 acre-feet for a total instream reservation of 3,914,455 af/y. This quantity is the DFG's request less depletions through Billings. The monthly breakdown is as follows:

	<u>CFS</u>	<u>AF/Y</u>	<u>APPROX. % tile</u>
January	2,489	153,053	50
February	2,488	138,186	55
March	2,389	177,648	50
April	3,589	213,541	55
May (1-20)	5,143	204,006	} 85 for May
May (21-31)	12,224	266,658	
June (1-7)	17,268	239,703	} 85 for June
June (8-30)	19,068	869,707	
July (1-20)	10,310	408,904	} 75 for July
July (21-31)	5,510	120,194	
August	4,090	251,457	65
September	3,415	203,185	65
October	3,589	220,680	50
November	3,489	207,592	50
<u>December</u>	<u>2,789</u>	<u>171,501</u>	<u>50</u>
Average	5,312	3,846,025	

80. The instream reservation of the Department of Fish and Game in the Yellowstone River at Billings, Montana, is for the same water as that reserved for the Department of Health and Environmental Sciences.

Instream Reservation for Clarks Fork River

81. The Department of Fish and Game has requested an instream

reservation in the Clarks Fork of the Yellowstone from the Montana-Wyoming state line to Bluewater Creek and from Bluewater Creek to the mouth of the Yellowstone River (Application 1781-r).

82. Evaluations of the flow requirements for the entire stream were based on water discharge measurements, water surface profile, judgment of qualified professional personnel and fisheries data collection (DFG-1781-r, Exh. 1, pp. 113 and 115; DFG-1781-r, Exh. 7, pp. 1-48).

83. Fish species present in the Clarks Fork River of the Yellowstone include trout, whitefish and sauger (DFG-1781-r, Exh. 1, p. 113).

84. Wildlife species present in the area of the Clarks Fork of the Yellowstone include beaver, muskrat, mink, raccoon and otter (DFG-1781-r, Exh. 1, p. 113).

85. An instream flow is needed for spawning, incubation and rearing purposes (DFG-1781-r, Exh. 1, p. 113).

86. It is established to the satisfaction of the Board that the amount of water needed for the purpose of the instream reservation in the Clarks Fork of the Yellowstone from the Wyoming-Montana border to the mouth of the Yellowstone River is the ninetieth percentile of the flow of the Clarks Fork River for the months of January, February, March, April, May, October, November and December and the seventieth percentile of the flow of the Clarks Fork River for the months of June, July, August and September.

87. Flow data were not available to the Board and it is the Board's intent that the Department of Fish and Game document the reservation by use of U.S.G.S. data or other acceptable data.

Instream Reservations for Certain Tributaries of the Clarks Fork of the Yellowstone

88. The Department has requested an instream reservation on

the following tributaries of the Clarks Fork of the Yellowstone:

- a) Butcher Creek - Headwaters to West Butcher Creek to mouth
- b) Willow Creek - Forest boundary to the Cooney Reservoir
- c) Red Lodge Creek - Custer National Forest to the Cooney River
- d) Clear Creek - Headwaters to mouth
- e) Dry Creek - Headwaters to mouth
- f) Rock Creek - Custer National Forest boundary to mouth
- g) Sage Creek - Headwaters to Crow Reservation
- h) Bluewater Creek - Headwaters to mouth

89. Evaluations of the various flow requirements of these streams included, but were not limited to, water discharge measurements, judgment of qualified personnel, fisheries data collection and measurements of channel physical parameters (DFG-1781-r, Exh. 1, pp. 1-48).

90. The fish species present in these streams include brook, rainbow, brown, cutthroat trout, and whitefish (DFG-1781-r, Exh. 1).

91. The wildlife species present in these streams include beaver, mink, muskrat, and raccoon (DFG-1781-r, Exh. 1).

92. An instream flow is necessary in these streams for spawning, incubation and rearing purposes (DFG-1781-r, Exh. 1).

93. It is established to the satisfaction of the Board that the amount of water necessary for the purpose of the instream reservation of the streams named in Finding 88 is the eighty-fifth percentile of the flow of the various streams, but the instream reservation is not to exceed the various requests of the Department of Fish and Game.

94. Flow data were not available to the Board and it is the Board's intent that the Department of Fish and Game document the reservation by use of U.S.G.S. data or other acceptable data.

Amount for Instream Reservation in Stillwater River

95. The Department of Fish and Game has requested an instream reservation for the Stillwater River from the mouth to the north end of Sioux Charlie Lake (Application No. 1781-r).

96. In granting the instream reservation for the Stillwater River, the Board will grant one instream reservation at the mouth.

97. Evaluations of the flow requirements for this stream reach are based on U.S.G.S. gauging data, low flow photography, fish population and life history data obtained by electrofishing (DFG-1781-r, Exh. 1, pp. 153-157).

98. The fish species present in the Stillwater River include brown and rainbow trout, and whitefish (DFG-1781-r, Exh. 1, pp. 153-157).

99. The wildlife species present include beaver, muskrat, mink, raccoon, bald eagles and otter (DFG-1781-r, Exh. 1, pp. 153-157).

100. An instream flow is necessary for spawning, incubation and rearing purposes (DFG-1781-r, pp. 154-158).

101. It is established to the satisfaction of the Board that the amount of water necessary for the purpose of the instream reservation of the Stillwater River is approximately the ninetieth percentile flow of the river, and amounts to 379,795 acre-feet per year with the following monthly breakdown:

	<u>CFS</u>	<u>AF/Y</u>
January	200	12,294
February	205	11,382
March	210	12,909
April	225	13,385
May	560	34,425

	<u>CFS</u>	<u>AF/Y</u>
June	2,075	123,444
July	1,030	63,318
August	480	29,507
September	480	28,555
October	380	23,360
November	225	13,385
<u>December</u>	<u>225</u>	<u>13,831</u>
<u>Average</u>	<u>524</u>	<u>379,795</u>
<u>Amount for Instream Reservations of Tributaries of Stillwater River</u>		

102. The Department of Fish and Game has applied for instream reservations in the following tributaries of the Stillwater River:

- a) Castle Creek - Mouth to 1,500 feet above Picket Pin Creek
- b) Picket Pin Creek - Mouth to mouth of Swamp Creek
- c) West Fork of Stillwater - Mouth to Castle Creek to Sweetgrass-Stillwater County line to Tumble Creek
- d) Little Rocky Creek - Mouth to Forest Service road #1414 crossing
- e) West Fishtail Creek - East Fishtail Creek to Richmond-Kennedy Ditch
- f) East Fishtail Creek - West Fishtail Creek to its East Fork
- g) Fishtail Creek - From the confluence of east and west Fishtail Creeks to mouth
- h) West Rosebud Creek - Custer National Forest boundary to Fiddler Creek to mouth
- i) East Rosebud Creek - Custer National Forest boundary to West Rosebud Creek

103. Evaluations of the various streams listed in Finding 102, and the flow requirements were based, but not limited to, water surface

profile programs, U.S.G.S. flow data, Fish and Gauging data, low flow photography, spawning redd velocity measurements, and fish population and life history data obtained by electrofishing (DFG-1781-r, Exh. 1).

104. The fish species present in these streams include brown trout, brook trout, cutthroat, rainbow and mountain whitefish (DFG-1781-r, Exh. 1).

105. The wildlife species present in these streams include beaver, muskrat, mink, raccoon and bald eagles (DFG-1781-r, Exh. 1).

106. An instream reservation is needed in these streams because of spawning, incubation and rearing purposes (DFG-1781-r, Exh. 1).

107. It is established to the satisfaction of the Board that the amount of water needed for the purpose of the instream reservation of the tributaries of the Stillwater River is the eighty-fifth percentile of the flow of the above listed tributaries, but the instream reservation is not to exceed the various requests of the Department of Fish and Game.

108. Flow data were not available to the Board and it is the Board's intent that the Department of Fish and Game document the reservation by use of U.S.G.S. data or other acceptable data.

Amount for Instream Reservation in Bridger Creek and Lower Deer Creek and Upper Deer Creek

109. The Department of Fish and Game has applied for an instream reservation in Bridger Creek from the headwaters to the Krone Ditch headgate, and Lower Deer Creek from the headwaters to Interstate Highway 90 and Upper Deer Creek from the headwaters to a point upstream from I-90 bridge (Application No. 1781-r).

110. Evaluations of flow requirements for these two streams were based on water discharge measurements and photographs, fish data collections and judgments of professional personnel (DFG-1781-r, Exh. 1, pp. 131 and 163; DFG-1781-r, Exh. 7, p. 93).

111. The game species present in both of these streams include cutthroat, rainbow, brown and brook trout (DFG-1781-r, Exh. 1, pp. 93 and 131 and 163).

112. The wildlife species present in the areas of the two streams are beaver, muskrat, mink and raccoon (DFG-1781-r, Exh. 1, pp. 93, 131 and 163).

113. An instream flow is needed for maintenance flows in Bridger Creek and for incubation, spawning and rearing purposes in both streams (DFG-1781-r, Exh. 1, pp. 93, 131 and 163).

114. It is established to the satisfaction of the Board that the amount of water necessary for the purpose of the instream reservation in Bridger Creek from the headwaters to the Krone Ditch headgate and Lower Deer Creek from the headwaters to Interstate Highway 90 and Upper Deer Creek from the headwaters to a point upstream from I-90 bridge is the ninetieth percentile of the flow of these streams and these instream reservations are subject to all reservations previously granted to Conservation Districts.

115. Flow data was not available to the Board and it is their intent that the Department of Fish and Game document the reservation by use of U.S.G.S. data or other acceptable data.

Amount for the Instream Reservation of Sweet Grass Creek

116. The Department of Fish and Game has applied for an instream reservation on Sweet Grass Creek from the Forest Service boundary to Lake Adam diversion and from Lake Adam diversion to the mouth (Application No. 1781-r).

117. Evaluations of the flow requirements for Sweet Grass Creek were based on water discharge measurements, photographs, U.S.G.S. records, fishery data collections and professional judgment (DFG-1781-r, Exh. 1, pp. 159-161).

118. The fish species found in Sweet Grass Creek include rainbow, brook and brown trout, and mountain whitefish (DFG-1781-r, Exh. 1, pp. 159-161).

119. The resident wildlife species found in the area of Sweet Grass Creek are beaver, muskrat, mink and raccoon (DFG-1781-r, Exh. 1, pp. 159-161).

120. An instream flow is needed to maintain the fish population after irrigation withdrawals and also for passage, spawning, incubation and rearing purposes (DFG-1781-r, Exh. 1, pp. 159-162).

121. It is established to the satisfaction of the Board that the amount necessary for the purpose of an instream reservation in Sweet Grass Creek from the Forest Service boundary to the mouth is the ninetieth percentile flow of the stream.

122. Flow data were not available to the Board and it is the Board's intent that the Department of Fish and Game document the reservation by use of U.S.G.S. data or other acceptable data.

Amount of Instream Reservation in the Boulder River

123. The Department of Fish and Game has requested an instream reservation in the Boulder River from the mouth of the West Boulder River and from the mouth of the West Boulder River to the mouth of Falls Creek and from the mouth of Falls Creek to the mouth of Hawley Creek (Application No. 1781-r).

124. The Board has established the Boulder River at Big Timber and the Boulder River at Contact as the points for the reservation.

125. Evaluations of the flow requirements for the Boulder River are based on fishery data collection, U.S.G.S. flow data, low flow photography, and life history data obtained by electrofishing (DFG-1781-r, Exh. 1, pp. 95-99; Tr. Vol. 16, pp. 53-80).

126. The fish species present in the Boulder River include brown and brook trout, rainbow and mountain whitefish (DFG-1781-r, Exh. 1, pp. 95-99).

127. The resident wildlife species present include beaver, muskrat, mink and raccoon (DFG-1781-r, Exh. 1, pp. 95-99).

128. An instream flow is necessary for spawning, incubation and rearing purposes (DFG-1781-r, Exh. 1, pp. 95-99).

129. It is established to the satisfaction of the Board that the amount necessary for the instream reservation of the Fish and Game of the Boulder River
Timber
at Big/Is 195,163 acre-feet per year with a monthly breakdown as follows:

	<u>CFS</u>	<u>AF/Y</u>
January	80	4,920
February	80	4,441
March	80	4,920
April	80	4,760
May	300	18,445
June	1,690	100,540
July	490	30,122
August	60	3,690
September	95	5,650
October	130	7,995
November	80	4,760
December	80	4,920
Average	<u>260</u>	<u>195,163</u>

130. It is established to the satisfaction of the Board that the amount of water necessary for the purpose of the instream reservation of the Fish and Game in the Boulder River at Contact is 137,120 acre-feet per year with a monthly breakdown as follows:

	<u>CFS</u>	<u>AF/Y</u>
January	50	3,075
February	50	2,875
March	50	3,075
April	50	2,975
May	150	9,220
June	1,080	64,265
July	380	23,365
August	170	10,450
September	110	6,545
October	85	5,225
November	50	2,975
<u>December</u>	<u>50</u>	<u>3,075</u>
Average	189	137,120

Amount for Reservation of Certain Tributaries of the Boulder River

131. The Montana Department of Fish and Game has applied for an instream reservation for the following tributaries of the Boulder River:

- a) East Boulder River - Mouth to Dry Fork Creek and from Dry Fork Creek to Brownlee Creek
- b) West Boulder River - Gallatin National Forest boundary to mouth

(Application No. 1781-r).

132. Evaluations of the flow requirements for these streams were based on Water Surface Profiles, fish data collections U.S.G.S.

flow data, low flow photography and life history data (DFG-1781-r, Exh. 1, pp. 119 and 165; Tr. Vol. 16, pp. 53-30 and Tr. Vol. 17, pp. 1-48).

133. The fish species present in these streams include brown, brook, cutthroat and rainbow trout and mountain whitefish (DFG-1781-r, Exh. 1, pp. 119 and 165).

134. The wildlife species present in the areas of these streams include beaver, mink, muskrat and raccoon (DFG-1781-r, Exh. 1, pp. 119 and 165).

135. An instream flow is needed for spawning, incubation and rearing purposes (DFG-1781-r, Exh. 1, pp. 120 and 166).

136. It is established to the satisfaction of the Board that the amount of water necessary for the purpose of the instream reservation for the Department of Fish and Game in the East Boulder River at its mouth is 23,146 acre-feet per year with a monthly breakdown as follows:

	<u>CFS</u>	<u>AF/Y</u>
January	15	922
February	15	832
March	15	922
April	15	892
May	20	1,229
June	165	9,815
July	50	3,073
August	22	1,352
September	20	1,189
October	18	1,106
November	15	892
December	15	922
Average	32	23,146

137. It is established to the satisfaction of the Board that the amount of water necessary to meet the purpose of the Department of Fish and Game's instream reservation in the West Boulder River at the mouth is 74,853 acre-feet per year with a monthly breakdown as follows:

	<u>CFS</u>	<u>AF/Y</u>
January	50	3,073
February	50	2,776
March	50	3,073
April	50	2,974
May (1-20)	50	1,983
May (21-31)	300	6,543
June	300	17,847
July (1-20)	300	11,898
July (21-31)	200	4,362
August	75	4,610
September	75	4,462
October	75	4,610
November	60	3,569
December	50	3,073
<u>Average</u>	<u>103</u>	<u>74,853</u>
<u>Amount for Instream Reservation in Big Timber Creek</u>		

138. The Department of Fish and Game has applied for an instream reservation in Big Timber Creek from the Gallatin National Forest boundary to the confluence with Swamp Creek to the Yellowstone River (Application No. 1781-r).

139. Evaluations of the flow requirements of this stream were based on electrofishing data, photographs and fisherman observations (DFG-1781-r, Exh. 1, pp. 83-86).

140. The fish species present in this stream include rainbow, brown and brook trout, and mountain whitefish (DFG-1781-r, Exh. 1, pp. 83, 85).

141. The wildlife species present in the area of this stream include beaver, raccoon, mink and muskrat (DFG-1781-r, Exh. 1, pp. 83-85).

142. An instream flow is necessary in Big Timber Creek in that it is necessary to maintain a portion of the existing fish and aquatic life and to maintain water quality to sustain trout population (DFG-1781-r, Exh. 1, pp. 83-85).

143. An instream flow is necessary for incubation, rearing and spawning purposes (DFG-1781-r, Exh. 1, p. 86).

144. It is established to the satisfaction of the Board that the amount necessary for the purpose of the instream reservation in Big Timber Creek at its mouth is 28,267 acre-feet per year with a monthly breakdown as follows:

	<u>CFS</u>	<u>AF/Y</u>
January	10	615
February	10	555
March	10	615
April	20	1,190
May	85	5,225
June	180	10,710
July (1-20)	100	3,967
July (21-31)	30	655

	<u>CFS</u>	<u>AF/Y</u>
August	25	1,535
September	20	1,190
October	13	800
November	10	595
December	10	615
<u>Average</u>	<u>39 cfs</u>	<u>28,267 af/y</u>
<u>Amount for Instream Reservations of Tributaries of Yellowstone River</u>		
<u>Between Shields and Boulder River</u>		

145. The Department of Fish and Game has requested an instream reservation for Little Mission Creek from the mouth to Little Mission Forks and Mission Creek from the mouth to Spring Creek and from Spring Creek to Little Bear Draw (Application No. 1781-r).

146. The basis for calculating the fishery and the necessary flow requirements for these streams is the "Blue-Ribbon Stream Classification" (DFG-1781-r, Exh.

147. The fish species present in these streams include cutthroat, brown, rainbow, rainbow-cutthroat hybrid trout and mountain whitefish (DFG-1781-r, Exh. 1, pp. 49, 56).

148. The wildlife species present in these streams include beaver, muskrat, mink, marten, otter, ducks and bald eagles (DFG-1781-r, Exh. 1, pp. 49, 56).

149. An instream flow is necessary for passage, spawning and recruitment of trout (DFG-1781-r, Exh. 1, p. 49).

150. It is established to the satisfaction of the Board that the amount necessary for the purpose of the instream reservations for Mission Creek at its mouth and for Little Mission Creek at its mouth is the fiftieth percentile

flow of the stream from January 1 through April 30 and from October 1 through December 31 and the ninetieth percentile flow of these streams from May 1 through September 31. The dominant discharge for each of these streams is also reserved.

151. Flow data was not available to the Board and it is their intent that the Department of Fish and Game document the reservation by use of U.S.G.S. data or other acceptable data.

Amount for Instream Reservation of Shields River

152. The Department of Fish and Game has requested an instream reservations in the Shields River from the mouth to Lodgepole Creek (Application No. 1781-r).

153. Evaluations of the flow requirements for the Shields River are based on U.S.G.S. data (DFG-1781-r, Exh. 1, p. 63).

154. The fish species present in the Shields River include cutthroat, rainbow, brown trout and whitefish (DFG-1781-r, Exh. 1, p. 63).

155. The wildlife species present in the Shields River include beaver, muskrat, mink, marten, otter, ducks, blue heron and bald eagles (DFG-1781-r, Exh. 1, p. 63).

156. An instream flow is necessary to allow potential spawning of cutthroat, rainbow and brown trout and whitefish from the lower reach of the Shields River and the Yellowstone River.

157. It is established to the satisfaction of the Board that the amount necessary for the purpose of the instream reservation in the Shields River from the mouth to Lodgepole Creek is approximately the ninetieth percentile flow of the Shields River.

158. Because the Board does not have complete flow data of the Shields River at the mouth it can only set forth the monthly breakdown of the instream reservation of the Shields River at Elk Creek near Wilsal and

at Cottonwood Creek near Clyde Park. The instream reservation of the Shields River at Elk Creek near Wilsall is 21,764 acre-feet per year with a monthly breakdown as follows:

	<u>CFS</u>	<u>AF/Y</u>
January	7	430
February	7	389
March	9	553
April	24	1,430
May	41	6,824
June	111	7,079
July	27	1,660
August	12	737
September	11	655
October	12	737
November	11	655
<u>December</u>	<u>10</u>	<u>615</u>
<u>Average</u>	<u>30</u>	<u>21,764</u>

The instream reservation of the Shields River at Cottonwood Creek near Clyde Park is 35,435 acre-feet per year with a monthly breakdown as follows:

	<u>CFS</u>	<u>AF/Y</u>
January	26	1,598
February	29	1,610
March	44	2,704
April (1-15)	93	2,766
April (16-30)	39	1,160
May (1-10)	83	1,645
May (11-20)	137	2,716
May (21-31)	184	4,012

	<u>CFS</u>	<u>AF/Y</u>
June (1-10)	189	3,747
June (11-20)	157	3,113
June (21-30)	105	2,082
July	22	1,352
August	13	800
September	13	773
October	30	1,845
November	27	1,606
<u>December</u>	<u>31</u>	<u>1,905</u>
<u>Average</u>	<u>40 cfs</u>	<u>35,434 af/y</u>

159. Flow data were not available to the Board and it is their 90th percentile intent that the Department of Fish and Game document the/reservation for the Shields River at mouth /by use of U.S.G.S. data or other acceptable data. This missing data were for the Shields River at the mouth.

Amount for Instream Reservations for Streams in Shields River Drainage

160. The Department of Fish and Game has applied for instream reservations for the following streams in the Shields River Drainage:

- a) Smith Creek - From mouth to Bitter Creek
- b) Flathead Creek - From mouth to Muddy Creek and from Muddy Creek to Cache Creek and from Cache Creek to South Fork of Flathead Creek
- c) Cottonwood Creek - From mouth to Little Cottonwood Creek and from Little Cottonwood Creek to Trespass Creek
- d) Rock Creek - From mouth to Forest Service West Boundary in Section 8 and from Forest Service West Boundary in Section 8 to Smeller Creek
- e) Brackett Creek - From mouth to Sheep Creek and Sheep Creek to Skunk Creek and Skunk Creek to one mile up north, middle and south forks (Application No. 1781-r).

161. Evaluations of the flows of these streams were based on the "Blue-Ribbon Stream Classification (DFG-1781-r, Exh. 1, pp. 30-66).

162. The fish species present in all of these streams include cutthroat, brown and brook trout, rainbow and whitefish (DFG-1781-r, Exh. 1, pp. 32, 38, 44, 59, 66).

163. The wildlife species present in the streams include beaver, muskrat, mink, marten, otter, ducks and bald eagles (DFG-1781-r, Exh. 1, pp. 32, 38, 44, 59, 66).

164. Instream flow is necessary in these streams to allow potential spawning of cutthroat, brown and brook trout and whitefish from the Shields River (DFG-1781-r, Exh. 1, pp. 32, 38, 44, 59, 66).

165. It is established to the satisfaction of the Board that the amount necessary for the purpose of the instream reservation for the following streams is the fiftieth percentile flows of the streams:

- a) Smith Creek - From mouth to Bitter Creek
- b) Flathead Creek - From mouth to South Fork of Flathead Creek
- c) Cottonwood Creek - From mouth to Trespass Creek
- d) Rock Creek - From mouth to Smeller Creek
- e) Brackett Creek - From mouth to one mile up north, middle and south forks.

166. Flow data were not available to the Board and it is the Board's intent that the Department of Fish and Game document the reservation by use of U.S.G.S. data or other acceptable data.

Amount of Instream Reservations of Tributaries of the Upper Yellowstone River

167. The Department of Fish and Game has requested an instream reservation for the following tributaries of the upper Yellowstone River:

- a) Bear Creek - From mouth to the mouth of North Fork of Bear Creek and North Fork of Bear Creek to Fish Creek
 - b) Cinnabar Creek - From mouth to Cottonwood Creek and Cottonwood Creek to Forest Service boundary at Township 8 South, Range 7 East, Section 32
 - c) ~~141~~ Heron Creek - From mouth to Cinnabar Creek and Cinnabar Creek to Yellowstone Park boundary
 - d) Cedar Creek - From mouth to Second Fork of Cedar Creek and from Second Fork to North Fork
 - e) Tom Miner Creek - From mouth to Canyon Creek and Canyon Creek to Trail Creek
 - f) Rock Creek - From mouth to Steele Creek
 - g) Big Creek - From mouth to Millfork Creek and Millfork Creek to Bark Cabin Creek
 - h) Six Mile Creek - From mouth to the north fork of Six Mile Creek
 - i) Fridley Creek - From mouth to Miller Creek and from Miller Creek to Needle Creek
 - j) Eight Mile Creek - From mouth to Big Draw and Big Draw to North Fork of Eight Mile Creek
 - k) Mill Creek - From mouth to the East Fork
 - l) Trail Creek - From mouth to West Pine Creek and West Pine Creek to the south boundary of Section 35
 - m) Suce Creek - From mouth to Lost Creek
 - n) Coke Creek - From mouth to Minor Creek
 - o) Billman Creek - From mouth to the mouth of Coke Creek and Coke Creek to Fork South of NE corner, Section 20
 - p) Fleshman Creek - From mouth to Perkins Creek
- (Application No. 1781-r).

168. Evaluations of flows of the stream listed above were based on the concept of "Blue-Ribbon Stream Classification" (DFG-1781-r, Exh. 1).

169. The fish species found in the above listed streams include cutthroat, rainbow, brook and brown trout, rainbow-cutthroat hybrids (DFG-1781-r, Exh. 1, pp. 24, 36, 56, 34, 68, 61, 27, 65, 47, 41, 51, 71, 67, 37, and 29).

170. The wildlife species found in the areas of the above listed streams include beaver, muskrat, mink, marten, otter, ducks and bald eagles (DFG-1781-r, Exh. 1, pp. 24, 36, 56, 34, 68, 61, 27, 65, 47, 41, 51, 71, 67, 37, and 29),

171. Instream flows are needed to allow potential passage, spawning, and successful recruitment of cutthroat, rainbow, and brown trout, and whitefish which may migrate from the Yellowstone River (DFG-1781-r, Exh. 1, pp. 24, 36, 56, 34, 68, 61, 27, 65, 47, 41, 51, 71, 67, 37, and 29).

172. It is established to the satisfaction of the Board that the amount necessary for instream reservations for the streams and their stretches is the twentieth percentile of the flow of the streams from January 1 through April 30 and October 1 through December 31, and the fiftieth percentile flow of the streams from May 1 through September 30. Flow data were not available to the Board and it is the Board's intent that the Department of Fish and Game document the reservation by use of U.S.G.S. data or other acceptable data.

Amount for Instream Reservations for "Spring" Creeks that are Tributaries of the Yellowstone River

173. The Department of Fish and Game has requested an instream reservation for the following tributaries of the Yellowstone River:

- a) Armstrong Spring Creek - From mouth to origin
 - b) Nelson Spring Creek - From mouth to origin
 - c) McDonald Spring Creek - From mouth to the norther boundary of Section 32
 - d) Emigrant Spring Creek - From mouth to origin
- (Application No. 1781-r).

174. Evaluations of the above listed streams were based on the concept of "Blue-Ribbon Stream Classification" (DFG-1781-r, Exh. 1).

175. The fish species present in the above listed streams include brown and brook trout, rainbow, cutthroat, rainbow-cutthroat hybrids and whitefish (DFG-1781-r, Exh. 1, pp. 21, 53, 50, and 42).

176. The wildlife species present in the areas of the above listed streams include beaver, muskrat, mink, marten, river otter, ducks and bald eagles (DFG-1781-r, Exh. 1, pp. 21, 53, 50, and 42).

177. Instream flows are necessary to maintain these highly productive spring creeks and the excellent trout population they support (DFG-1781-r, Exh. 1, pp. 21, 53, 50, and 42).

178. Instream flows are necessary to provide potential spawning runs (DFG-1781-r, Exh. 1, pp. 21, 58, 50 and 42).

179. It is established to the satisfaction of the Board that the amount necessary for the purpose of the instream reservations for the above listed streams is the tenth percentile flow of the streams during the periods of January 1 through April 31 and October 1 through December 31 and the fiftieth percentile flow of the streams during the period of May 1 through September 30. Flow data were not available to the Board and it is the Board's intent that the Department of Fish and Game document the reservation by use of U.S.G.S. data or other acceptable data.

Amount of the Instream Reservation in Upper Reach of Yellowstone River

180. The Department of Fish and Game has requested an instream reservation in the upper reaches of the Yellowstone River (Application No. 1781-r).

181. Although the Fish and Game has provided U.S.G.S. data/and ^{at Corwin Springs} instream requests for the Yellowstone River near Tom Miner Creek and at Emigrant, it is the intent of the Board that the instream reservation of the Fish and Game be measured at the U.S.G.S. station near Livingston.

182. Evaluations of the flow data on the upper reach of the Yellowstone River were based on the Blue Ribbon Stream concept, U.S.G.S. gauging data, flow requirements of the lower Yellowstone, current biological data and streamflow frequency data (DFG-1781-r, Exh. 1, pp. 74, 76 and 78).

183. The fish species present in the upper Yellowstone River include cutthroat, rainbow, brown trout, brook trout, rainbow-cutthroat hybrids (DFG-1781-r, Exh. 1, pp. 74, 76).

184. The wildlife species present in the upper reach of the Yellowstone River include beaver, marten, muskrat, river otters, raccoon, deer, pheasant, ducks, geese, bald eagles and blue heron (DFG-1781-r, Exh. 1, pp. 74 and 76).

185. An instream flow is necessary to preserve and maintain fish and wildlife populations at current levels (DFG-1781-r, Exh. 1, pp. 75 and 77).

186. An instream flow is necessary to maintain the physical characteristics of the stream channel through adequate sediment transport and bedload movement (DFG-1781-r, Exh. 1, pp. 22 and 74-77).

187. An instream flow is necessary for nesting, incubation, spawning and rearing purposes (DFG-1781-r, Exh. 1, pp. 22 and 74-77).

188. It is established to the satisfaction of the Board that the amount necessary for the purpose of the instream reservation in the upper reach of the Yellowstone River, as measured at Livingston, is approximately the twentieth percentile for the period between January 1 through April 30 and October 1 through December 31 and approximately the ninety-fifth percentile for the period of May 1 through September 30, plus the dominant discharge of one 24 hour period of 18,200 cfs and 36,091 af/y. This total reservation amounts to 1,879,813 acre-feet per year with a monthly breakdown as follows:

	<u>CFS</u>	<u>AF/Y</u>	<u>APPROX. %tile</u>
January	1,330	81,760	20
February	1,320	73,292	20
March	1,350	82,989	20
April	2,490	148,132	20
May (1-10)	2,500	49,575	} 95 for May
May (11-20)	1,900	37,677	
May (21-31)	4,700	93,202	
June (1-10)	7,700	152,693	} 95 for June
June (11-20)	9,000	178,472	
June (21-30)	3,000	158,642	
July (1-10)	5,400	107,083	} 95 for July
July (11-20)	3,800	75,355	
July (21-31)	2,500	49,575	
August (1-10)	1,600	31,728	} 95 for Aug.
August (11-31)	2,125	88,492	
September	1,555	92,508	95
October	2,350	144,463	20
November	1,790	106,488	20
December	1,490	91,596	20
Average	25,553 cfs	1,843,722 af/y	

CONCLUSIONS OF LAW

1. Chapter 8, Title 89, R.C.M. 1947, and in particular Section 89-890, R.C.M. 1947, authorizes the adoption by the Montana Board of Natural Resources and Conservation of orders reserving water to qualified applicants for reservations of water.

2. If ordered adopted, a reservation must be ordered adopted in accordance with Chapter 8, Title 89, R.C.M. 1947, and any rules adopted thereunder.

3. The Applicant, the Montana Fish and Game Commission, is an agency of the State of Montana and as such is entitled to apply to reserve waters within the State of Montana in accordance with Section 89-890, R.C.M. 1947, and any rules adopted thereunder.

4. All pertinent statutes and rules of the State of Montana have been adhered to in the review of this reservation Application, both by the Montana Department of Natural Resources and Conservation and by the Montana Board of Natural Resources and Conservation.

5. Based upon the above Findings of Fact, and specifically based upon the conditions, limitations, or modifications and partial denials of the full Application appearing in said Findings, all pertinent criteria delineated in Section 89-890, R.C.M. 1947, and any rules adopted thereunder providing for the adoption of an order reserving water have been met.

6. Nothing found herein has bearing upon the status of water rights claimed by the Applicant other than those herein newly applied for, nor does anything found herein have bearing on the status of claimed water rights of any other party except in relation to those rights herein newly applied for, to the extent necessary to reach a conclusion herein.